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AUTHOR Gelzheiser, Lynn M.; Meyers, Joel
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ABSTRACT

A study examined the reading experiences of students receiving remedial reading or resource room instruction in order to identify the similarities and differences in remedial reading instruction. Subjects, 78 students enrolled in remedial or resource room programs in six different elementary school districts in upstate New York, had their reading experiences coded as off-task, direct reading, indirect reading, other academic subject, management, waiting, or out of room. Results indicated that: (1) the reading experiences of students in resource and remedial programs were similar in many ways; (2) classroom and pullout reading instruction often placed comparable emphasis on phonics and comprehension activities; and (3) the time spent engaged in phonics and comprehension activities was modestly related to reading achievement. (Eight tables and five figures of data are included; 28 references are attached.) (RS)

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Students' Reading Experiences during Classroom, Resource, and Remedial Reading Instruction

Lynn M. Gelzheiser and Joel Meyers

Department of Educational Psychology and Statistics

State University of New York at Albany

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Requests for reprints should be addressed to Lynn M. Gelzheiser, ED 233, State University of New York, 1400 Washington Avenue, Albany, NY 12222. Information about the observation system and program is available from Bryant Computercraft, Box 221, New Lebanon, NY 12125.

Abstract

The reading experiences of students receiving remedial reading or resource room instruction were observed, in order to address several concerns: school effects on reading experiences, similarities and differences of resource and remedial programs, congruence of curriculum and instruction in the classroom and pullout settings, and the relationship between reading experiences and achievement. Different schools were found to provide different reading experiences for students, making it difficult to generalize about resource and remedial programs. The reading experiences of students in resource and remedial programs appeared similar in many ways; it was rarely the case that resource students had more intensive reading experiences than remedial students. Evidence was obtained that classroom and pullout reading instruction often placed comparable emphasis on phonics and comprehension activities. Little evidence was obtained to support the argument that special methods were used in the pullout setting. Time spent engaged in phonics and comprehension activities was modestly related to reading achievement. The importance of quality instruction in resource and remedial programs is stressed.

Students' Reading Experiences during Classroom, Resource, and Remedial Reading Instruction

Students who are experiencing difficulty in learning to read may receive supplemental or special reading instruction provided outside the regular classroom by a specialist teacher, i.e., remedial reading or resource room programming. The goal of these programs is to provide more intensive instruction so that students catch up with their peers. Thus, these programs seek to provide additional instructional time allocated to reading, with smaller instructional groups and more individualized lessons than can be provided in the regular classroom setting. While the programs are designed to be special in the manner in which they deliver instruction, they are viewed as most effective when the reading curriculum that students experience is congruent across the two settings (Allington & Johnston, in press).

In this study we observed the reading experiences (i.e., silent and oral reading, reading of words and text, participation in support activities such as discussion or workbook) of students enrolled in resource room and remedial reading programs. Reading instruction in both the pullout setting and in the classroom was studied. The observational system employed was a revision of the Student-Level Observation of Beginning Reading (Leinhardt & Seewald, 1980), which had previously been used to characterize self-contained learning disabilities classrooms (Leinhardt, Zigmond, & Cooley, 1981) and resource room programs (Haynes &

Jenkins, 1986). The observations were conducted to assist in addressing several concerns: school effects on student reading experiences, similarities and differences of resource and remedial reading programs, congruence of curriculum and instruction in pullout and classroom settings, and the relation between student reading experiences and achievement.

Explaining Variability in Student Reading Experiences: District, School, Teacher, and Scheduling Effects

Previous research has documented much variability in the experiences of students in classroom reading instruction (Graden, Thurlow, & Ysseldyke, 1983; Ysseldyke, Thurlow, Mecklenburg, Graden, & Algozzine, 1984), in remedial reading (Allington & McGill-Franzen, in press-a, in press-b); and in resource room programs (Allington & McGill-Franzen, in press-a, in press-b: Haynes & Jenkins, 1986; Thurlow, 1982; Thurlow, Graden, Greener, & Ysseldyke, 1983; Ysseldyke & Christenson, 1986). Evidently, two resource room students may have vastly different reading experiences, as may any pair of remedial reading students.

Efforts to explain the variability of students' reading experience have examined the effects of factors such as student need, the school or district's philosophy of reading instruction, teacher planning, and scheduling. For example, Allington, Stuetzel, Shake and LaMarche (1986) documented that different remedial reading teachers provided different reading experiences for their students. Stanley and Greenwood (1983) found that

students in a Title 1 school did less active responding than students in a non-Title 1 school.

Haynes and Jenkins (1986) considered the effects of several of these factors. They found a modest correlation between student need and amount of resource room service provided, but found that need did not account for the time students actually spent reading. They also found district effects. One district in their study had a strong emphasis on direct instruction, and here, student reading time was greater and student reading experiences were relatively uniform. The other district had a less definate philosophy of instruction and student experiences were more variable, which Haynes and Jenkins attributed to teacher effects.

Examining scheduling effects, Allington and McGill-Franzen (in press-a) found that different schools had different approaches to scheduling reading instruction. While almost all of the remedial reading students they observed had both classroom and remedial reading instruction, in two schools many resource room students did not have classroom reading time. Archambault and St. Pierre (1988) documented differences across districts in the amount of time allocated to language arts instruction for remedial reading students (86 to 135 minutes).

Pilot observations conducted prior to the present investigation suggested that schools varied widely in their organization of resource room and remedial reading programs. Thus, a first purpose to this study was to describe the

experiences of pupils in resource room and remedial reading programs in six schools representing six districts, two urban, two suburban, and two rural, and to determine the extent to which district/school factors accounted for differences in student reading experiences.

Comparisons of Resource Room and Remedial Reading

Remedial reading and resource room programs have a common purpose and most often, both are organized as pullout programs. Jenkins, Pious, and Peterson (1988) have questioned the validity of separating these programs, suggesting that the two could profitably be merged. In support of this argument, Allington and McGill-Franzen (in press-b) collected qualitative data indicating that typically, resource and remedial programs did not differ systematically. The present study was designed to extend their comparisons of the reading experiences of students in resource and remedial reading programs, using a quantitative approach.

Since some have reported that resource students have greater reading deficits than do remedial reading students (Shinn, Tindal, Spira, & Marston, 1987; Shinn, Ysseldyke, Deno & Tindal, 1986), one might expect to find resource students spending more time in reading instruction. Surprisingly, Allington and McGill-Franzen (in press-a) found that resource students received less reading/language arts instruction than did remedial reading students.

Other investigators have compared pullout programs with

classroom reading programs; in some cases their results also suggest that resource students receive less reading instruction than do remedial students. For resource room students, investigators have failed to find evidence that they have more reading experience than normally achieving peers (Christenson & Ysseldyke, 1986; Haynes & Jenkins, 1986; Ysseldyke, Thurlow, Mecklenburg, & Graden, 1984), while Archambault and St. Pierre (1988) found that remedial reading students had more time allocated to language arts instruction than non-remedial students. However, other investigations of remedial reading suggest that it rarely increases the total time devoted to instruction (Birman, 1988). Allington et al. (1986) found that remedial reading students did not seem to receive additional time allocated to reading instruction.

Congruence of Pullout and Classroom Reading Curriculum and Instruction

Allington and Johnston (in press) have argued the importance of a consistent approach to reading instruction across the classroom and pullout settings. Yet evidence suggests there is relatively little congruence across settings in reading curriculum (Allington & McGill-Franzen, in press-b; Allington et al., 1986; Johnston, Allington, & Afflerbach, 1985). The present study investigated whether the proportion of time allocated to phonics instruction and to comprehension-related activities was consistent across classroom and pullout settings.

Another goal of this study was to provide evidence as to whether instructional methods differed in the pullout and classroom settings. As segregated programs, it has been suggested that pullout programs are appropriate if they capitalize on their smaller instructional groupings to provide for more direct teaching (Heller, Holtzman, & Messick, 1982). Specifically, in the pullout setting one would hope to see a greater proportion of the time devoted to reading, a higher rate of active responding and of oral responding, with less time devoted to management and worksheets.

Students' Reading Experiences and Achievement

Only limited evidence is available as to the relationship between students' reading experiences and achievement for resource and remedial students, and findings differ widely. For learning disabled students, silent reading correlated highly with reading achievement (Thurlow, 1982) and with total achievement (Thurlow, Graden, Greener & Ysseldyke, 1983). Time spent reading aloud was an excellent predictor of change in reading achievement (Thurlow, 1982), change in reading recognition, (Thurlow et al., 1983), and change in comprehension (Thurlow et al., 1983).

On the other hand, Skiba, Sevcik, Wesson, King, and Deno (1983) found that for resource room students, active academic responding did not correlate significantly with posttest achievement; pretest achievement was the best predictor. Haynes and Jenkins (1986) also found that pretest scores were the best

predictors of posttest achievement for resource room students; measures of reading experiences accounted for less than 1% of the variance in posttest performance. The predictive power of their process measures may have been limited because they observed only in the resource room and not in the classroom. The present study sought to determine whether measures of student reading experiences would account for the reading achievement of remedial reading and resource room students, when both pullout and classroom reading experiences were assessed.

In summary, this investigation used observations of students' reading experiences during classroom, resource room and remedial reading instruction for four purposes: to determine the effect of school on students' reading experiences; to identify differences among resource and remedial students' reading experiences; to establish the degree of congruence of reading curriculum and instruction across the classroom and pullout setting; and to determine the relationship between students' reading experiences and reading achievement.

Method

Subjects

Seventy-eight subjects were drawn from six elementary schools, each from a different school district, two urban (n = 23), two suburban (n = 28), and two rural (n = 27), all in the greater Capital District of New York State. Subjects were recommended for participation in the study by their pullout teacher, and parental

consent was obtained. All subjects were enrolled in grades 2, 3, 4, or 5, and were receiving remedial reading (n = 46) or resource room (n = 32) instruction in reading. Table 1 breaks down subjects according to school, grade level, and pullout program, and Table 6 reports achievement test scores by school. At pretest, remedial and resource students did not differ significantly in achievement, (mean percentile rank = 27.7, SD = 17.3 versus mean = 29.3, SD = 15.9, respectively).

Insert Table 1 about here

With the exception of two fifth grade students who participated in a cooperative learning program that was team taught by a remedial reading and regular classroom teacher, all of the remedial reading and resource programs observed were pullout programs. Except for the two cooperative learning students, all of the remedial reading students received reading instruction in the regular classroom in addition to their remedial lessons. This was not always the case for resource room students; 15 resource room subjects received reading instruction in both the regular class and in the resource room while 17 resource room students had reading only in the resource room.

Instrumentation

Students' reading experiences were coded using the present authors' revision of the Student-Level Observation of Beginning

Reading (Leinhardt & Seewald, 1980). A computer program (Bryant, Gelzheiser, & Meyers, 1987) was written to display coding options, to time observation and coding intervals and to record the codes that were selected. All observers used Zenith 181 laptop computers to record observations.

The coding system was an interval recording procedure. A first target student was observed for 10 seconds and his activity then coded. The coding interval was as long as required by the coder, but was a multiple of 5 seconds. If a second target student were present, he or she was observed next and his or her activity coded. Up to three students were observed in one lesson, in contrast to Leinhardt & Seewald's (1980) system where up to ten students can be observed. After one to three target students had been observed, the observer then turned attention to the teacher, whose behavior was observed for ten seconds, and then coded. If an aide was present, they were then observed. (The teacher coding system and results obtained are described in another publication.) This cycle was repeated for the entire time period allocated to reading instruction.

As summarized in Figure 1, students' reading experiences were coded as (in order of priority) off-task, direct reading (that is, reading or looking at print), indirect reading (activities designed to support reading instruction, such as worksheets and discussion), other academic subject, management (which included preparatory activities such as directions and passing out

worksheets as well as discipline), waiting, or out of room. An uncertain code was also used to minimize guessing. If a student did more than one of these during the ten second interval, then the highest priority code was selected. However, off-task behavior could only be coded if it lasted 3 seconds or longer.

Insert Figure 1 about here

If direct reading was chosen, it was further coded according to the material being read, i.e., letters, words in isolation, text, or workbook (workbook was coded when the student was reading a worksheet that contained a mix of letters, words in isolation, and/or text, or if the observer could not determine the nature of the material on the worksheet being read). It was also noted whether the reading was oral or silent. If indirect reading was chosen, this was further coded as workbook (this was coded if the student was writing in a workbook or worksheet at any time during the interval; if reading and writing were mixed, direct reading was coded), stories/text, (which was used when the student was listening to, telling, or writing a story or other text), discussion of the meaning of a passage or of comprehension strategies (this was further coded as spoken by the child or listening), or oral drill (this was the oral analog of workbook activities, and was further coded as oral participation by the child or listening). Talk about vocabulary terms was coded as

oral practice rather than discussion, unless the teacher directly related the meaning of the vocabulary word to the meaning of the story.

Student reading achievement was measured using the contextual decoding score (decoding of text) from the Decoding Skills Test (Richardson & DiBennetto, 1985) and three subtests from the Stanford Achievement Test (Gardner, Rudman, Karlsen, & Merwin, 1982): reading comprehension, vocabulary, and listening comprehension. The last two subtests were summed to serve as a language measure. Student reading achievement at the start of the study was estimated by using reading comprehension scores from standardized achievement tests given by the schools the previous year. Although different tests were used by different schools, high correlation among standardized tests led us to expect that these data would be adequate for the purpose of controlling for pre-existing differences in student reading achievement.

Procedure

Observations were conducted by six pairs of graduate assistants. For any given observation, one observer used the SOBR coding system, while the other kept a running record of classroom activities (these data are reported elsewhere). The second observer was available to discuss coding decisions in case of uncertainty. Observers alternated roles.

Initially, observers were trained in eight group meetings. They were provided an explanation of the coding system, then

reading activities presented in paper and pencil and simulation examples were coded. Observers practiced in pairs coding video tapes of reading instruction and in classrooms not involved in this study. During this time they met weekly with the authors to resolve ambiguities in the coding system. Training was continued until a pair achieved interrater agreement of at least 90% for the average of teacher and student codes. During actual data collection, 4 to 6 (monthly) checks were conducted for each pair to monitor reliability. The mean percentage agreement for student codes during the study was 94%.

Results obtained in any given coding interval were used to compute reliability. For example, if a student was coded as direct silent reading of text, this was treated as one instance of agreement or disagreement although it involved three coding decisions. If reliability of all coding decisions had been computed, reliability would have been higher than that reported here.

Target students were observed four or more times in each setting where they received reading instruction (i.e. classroom, resource, or remedial reading), except for 10 cases where scheduling constraints allowed only 3 observations to be conducted in one of a student's instructional settings. Typically, the observers visited a given setting to see a child once a month. The observation began when the classroom clock displayed the scheduled (as conveyed to the observers by the teacher) starting

time for reading instruction and ended when the classroom clock displayed the scheduled ending time. The computer recorded the time that the observation began and ended.

Data Analysis

Approach

The observations made of each child in each setting were averaged to produce a mean amount of time that the child spent on each activity in each setting. Since the basic SOBR codes (as indicated in Figure 1) are mutually exclusive, the time allocated to reading instruction in each setting was computed by summing the time allocated to all of the basic SOBR activities.

The basic SOBR codes were also combined in ways designed to help answer the research questions. Figure 2 gives the definitions of curriculum and methods variables used to compare schools and their programs and to estimate congruence across settings. The reader will note that some of the basic codes were used more than once. As a result, certain method and curriculum variables are correlated and these variables, when summed, do not result in the total amount of time allocated to reading instruction.

Insert Figure 2 about here

A number of research questions required information about a student's total reading experiences, across the two settings where

they received reading instruction (i.e. classroom and remedial reading, or classroom and resource). For these tests, the time a student spent on each activity in the pullout and classroom settings was summed. This represented what reading instruction would be like for the child on a day when he or she participated in both classroom and pullout instruction. It should be noted that resource room students received pullout instruction daily but most remedial reading students went to the pullout setting two or three times a week. For resource room students who did not receive classroom reading instruction, their resource time was necessarily the same as the total time allocated to reading instruction.

Preliminary Analyses

Effects of Coding Time. The computer program reported the time each code was recorded. Because each coding interval lasted until a coding decision was made, it was necessary to determine whether any of the basic SOBR codes (defined in Figure 1) took especially little time to record (and were therefore over-represented) or took especially long to record (and thus were under-represented). The mean time required to record each code was computed and differences in the length of time required to code the various student codes were found to be minimal. No adjustments for length of coding interval were made.

Effects of Grade on Students' Reading Experiences. A preliminary analysis examined whether students at different grade

levels had comparable reading experiences, so that grades could be combined for subsequent analysis. A multivariate analysis of variance was done to test for differences between grades, with time spent off-task, in direct and indirect reading, on other academic subjects, in management, waiting, and out-of-room (these codes are illustrated in Figure 1) as the dependent measures. No significant differences between grades were found, so grades were combined in subsequent analyses. The percent of time spent on different activities at different grade levels is summarized in Table 2. Table 2 also indicates that students in grade 2 spent about 6% more of their total time observed on phonics activities (as defined in Figure 2), and 6% less time on comprehension activities (see Figure 2), as compared with students in grades 3-5.

Insert Table 2 about here

School Effects on Students' Reading Experiences

Results

A first question was whether schools provided students different experiences for reading instruction. A MANOVA tested for school effects using six dependent variables: total time across classroom and pullout setting that a student spent in reading instruction, time spent in direct reading of text, discussion, oral drill, workbook, (all basic SOBR codes from

Figure 1) and time spent on phonics (as defined in Figure 2); grade was used as a covariate. Comprehension was not used as it was redundant with reading of text and discussion (see Figure 2).

It was found that schools provided significantly different reading experiences for students (Pillais' test, multivariate F (30, 350) = 6.99, $p < .001$; Hotellings' test, multivariate F (30,322) = 13.41, $p < .001$). Univariate tests indicated that in different schools, students spent different amounts of time in reading instruction, F (5,71) = 21.75, $p < .001$; in reading text, F (5,71) = 22.75, $p < .001$; in discussion, F (5.71) = 7.10, $p < .001$; on workbook activities, F (5,71) = 11.6, $p < .001$; and in phonics activities, F (5,71) = 9.27, $p < .001$, having covaried for grade. Schools did not differ in students' oral drill experiences. Table 3 gives the average (across classroom and pullout programs) number of minutes devoted to each of these activities in the six schools.

Insert Table 3 about here

Discussion

As Table 3 indicates, in two schools, Rural-1 and Urban-1, students experienced well over an hour of reading instruction on days when they had a pullout program. In three schools, reading averaged one hour: Rural-2, Suburban-1, and Urban-2. In the remaining district, Suburban-2, students averaged a half hour of

reading time. Three scheduling factors accounted for the differences in students' reading time: use of an integrated reading/language arts program versus separate periods for reading and language arts; scheduling of pullout instruction during classroom reading time or distinct from classroom reading time; and the use of resource time for content other than reading instruction.

In the two schools where students were found to spend the longest time in reading instruction, Urban-1 and Rural-1, students were observed during the relatively long time period devoted to integrated reading/language arts program, while in the remaining schools, students were observed only during relatively shorter reading periods. The reading/language arts periods observed were coded as devoted primarily to reading activities, rather than another academic subject, as any direct reading (even of other subject material) was coded as reading, and support activities were coded as reading in ambiguous cases, although they may also have served to support spelling or writing. The extent to which student activity during reading/language arts instruction ressembled that of spelling or writing instruction in other schools is not known.

School policy for scheduing pullout reading instruction also impacted student reading experiences. The schools with the longest reading times, Urban-1 and Rural-1, generally followed a rule that pullout instruction was to occur at a time other than

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reading instruction, so that students had a full classroom reading period and remedial or resource room reading. In two schools, Rural-2 and Urban-2, this policy was followed quite strictly for remedial reading students, but at least some resource students had resource reading instead of classroom reading; the net effect was to keep the district average to around an hour of reading instruction. Suburban-1 followed a policy of scheduling remedial and resource reading instruction during the scheduled reading period, so that all students had an hour of reading instruction.

A final factor influencing students' reading experiences was resource room scheduling. Resource scheduling seemed to be done according to preferences of individual teachers and/or student need, rather than by school policy. Some resource room students participated in classroom reading groups and some received all their reading instruction in the resource room. Some students who went to the resource room during classroom reading time might spend all of this time on reading activities; however, in Urban-2, Rural-2, and Suburban-2, students had IEP goals in other academic areas so only part of the time was devoted to reading and the remainder was spent on other academic areas. In Suburban-2, where all of the subjects were resource students, the effect of this policy was to bring the school average to a half an hour of reading time. (These students did have additional seatwork time which often included reading seatwork, but this was not observed as it was not formal reading instruction.)

In summary, a certain amount of variation in students' reading experiences can be accounted for by schoolwide scheduling policy as well as scheduling decisions made on the basis of individual teacher and student needs. In some schools, policy regarding scheduling of classroom reading instruction differs for resource and remedial students, and causes differences in their reading experiences.

Of course, school differences of this magnitude compromise generalizations about the experiences of resource and remedial reading students. Students in "comparable" programs may have different experiences depending on the school they attend. Students with comparable needs may have different experiences depending on whether they are assigned to resource or remedial support programs. A priority for research seeking to describe the experiences of resource and remedial students should be to make explicit the scheduling "biases" of participating schools; without this information, it is difficult to interpret findings.

Comparisons of Resource Room and Remedial Reading Results

Strong school effects precluded averaging time data across schools in order to compute statistical tests comparing reading experiences of resource and remedial students. Because the number of students in each placement in each school was not always large enough to justify a school by placement analysis of variance, a graphical technique was used to illustrate the difference between

time allocated to reading instruction for resource and remedial students in each school. The sum of reading experiences across classroom and pullout settings was compared.

Figure 3 illustrates district differences in total reading instruction time. Differences between resource and remedial programs varied with school: in two schools, Urban-1 and Rural-1, resource students appeared to spend more time in reading instruction on the days when they received pullout instruction, but in two other schools, Urban-2 and Rural-2, they appeared to receive less reading instruction time than remedial students. In Suburban-1, the programs provided similar amounts of reading instructional time.

For direct reading of text, illustrated in Figure 4, there appeared to be no differences between resource and remedial programs in three schools, Urban-1, Rural-1, and Suburban-1. Remedial reading students appeared to spend more time reading text in two schools, Urban-2 and Rural-2. Time spent reading text was quite variable, ranging from a low of 5 minutes per day to a high of 30 minutes.

For basic skills, as defined in Figure 2, differences between resource and remedial programs again varied with school (see Figure 5). Resource students appeared to have had more experiences with basic skills in Urban-1 and Suburban-1, while in Urban-2 resource students had less experience with basic skills than remedial students. In the two rural schools, there appeared

to be no differences between the programs.

Insert Figures 3, 4, and 5 about here

To correct for school differences in scheduled instructional time, percentages of time allocated to different activities were used to compare resource and remedial students. Because of the large number of comparisons, for individual *t*-tests alpha was set at .01 to avoid a Type I error.

Insert Tables 4 and 5 about here

Resource and remedial programs did not differ significantly in the percent of time students spent on the basic SOBR non-reading activities of being off-task, out-of-room, doing another academic subject, waiting, and management. (Means are reported in Table 4.) In resource room, students spent a significantly smaller percent of their time on direct reading than students did in remedial reading, t (74) = -3.52, $p < .01$, and a greater percent of time overall on indirect reading activities, t (74) = 3.54, $p < .01$.

The two programs did not differ in the percentage of time spent on phonics and comprehension activities in the curriculum. (Means are reported in Table 5). For certain methods variables, the two programs did not differ, i.e., direct and indirect

experiences with text, and oral participation, although there were some differences in the methods experienced by these students. Specifically, students in resource spent a greater percent of time in discussion, $t\ (74) = 2.79$, $p < .01$, and on oral drill activities, $t\ (74) = 4.07$, $p < .001$, than did student in remedial reading. Resource students spent a smaller percent of their time on workbook activities, $t\ (74) = -3.38$, $p < .01$, and were actively engaged a smaller percent of their time than remedial students, $t\ (74) = -3.78$, $p < .001$.

Discussion

It appears difficult to generalize about differences in the reading experiences of resource and remedial reading students because the programs vary with school. One more consistent finding is that resource students may not spend more time reading text than remedial students. This can be characterized as another example of Stanovitch's (1986) "Matthew effect": those who need it the most spend the least time reading.

When percentages were used to control for different lesson lengths in different schools and programs, certain similarities in the reading experiences of remedial reading and resource room students emerged. The programs used phonics and comprehension activities to the same extent, and provided students comparable experiences with text. Evidence of similarity of these programs provides additional support for Jenkins et al.'s (1988) argument that these programs could be merged to students' benefit.

Evidence of differences in methods used by resource and remedial teachers are also worthy of note. Further evidence of the "Matthew effect" is the finding that resource programs devote a smaller fraction of their time to direct reading, and more time to indirect reading. On the other hand, during these indirect reading periods, resource programs support activities emphasized discussion while remedial programs used proportionally more workbook activities.

Congruence of Pullout and Classroom Reading Curriculum and Instruction

Results

For the subset of 59 students (15 resource and 44 remedial reading) who had both pullout and classroom instruction, reading experiences in the two settings were inter-correlated. Since the time allocated for classroom reading instruction differed from that allocated to pullout instruction, percentages were used. For the group of 59 students, there was modest consistency across settings in the percent of time allocated to these aspects of the curriculum (for phonics, $r = .41$, $p < .001$, and for comprehension, $r = .29$, $p < .05$). When computed separately for the two groups, correlations were higher for resource students, ($r = .52$, $p < .05$ for phonics, and $r = .70$, $p < .01$ for comprehension), and mixed for remedial reading students ($r = .42$, $p < .01$, for phonics, and $r = .09$, ns, for comprehension).

To determine the whether there were differences in the methods

students experienced in the classroom and pullout settings, a series of t-tests for correlated samples were conducted. Because of the number of t-tests conducted, alpha was set at .01 to protect against Type I error.

Remedial students spent a greater percent of their time on direct reading in the pullout setting as compared with the classroom, t (43) = -4.83, $p < .001$, means reported in Table 4. In the pullout setting, they participated orally a greater percent of the time t (43) = -4.84, $p < .001$, and were more active participants, t (43) = -7.39, $p < .001$, means reported in Table 5. Remedial reading students spent a smaller percent of their pullout reading time, as compared with time in the classroom, in oral drill, t (43) = 4.97, $p < .001$, and discussion t (43) = 3.52, $p < .01$ (means are reported in Table 5). The percentage of time allocated to management, workbooks and direct reading of text did not differ significantly across the two settings for remedial reading students.

Resource students spent a significantly greater percent of their time in the resource setting, as compared with the classroom setting, in oral participation, t (14) = -4.94, $p < .001$. The percent of time allocated to direct reading, active participation, oral drill, discussion, comprehension, management, and workbook did not differ significantly across the two settings for resource students.

Discussion

This study provides evidence of congruence in the curriculum students encounter in the classroom and pullout setting; that is, a relationship in the percentage of time students spent on phonics and comprehension activities across settings. This evidence was especially strong for resource students. Since data collected earlier in the same geographic area and in some of the same school districts found only limited evidence of curricular congruence (Allington & McGill-Franzen, in press-b, Allington et al., 1986; Johnston et al., 1985), evidence of a systematic relationship between the classroom and pullout curriculum is cause for optimism.

One explanation is that the congruence found in this study represents improvements in response to the work of Allington and his colleagues. Some of the teachers and administrators participating in this study were aware of his research and/or had studied with Allington and his colleagues; many were aware of the "Congruence Projects" initiated by the New York State Education Department to improve coordination between remedial and classroom reading instruction.

At the same time, greater coordination is certainly possible and should be sought, especially in the area of comprehension activities for remedial reading students. Also, it should be noted that the categories examined were general ones; these data do not reflect the degree of congruence students experience while learning specific topics in the reading curriculum.

This study obtained only limited evidence of differences in the instructional methods used in the classroom and pullout settings, especially for resource students, where the only special benefit of the resource setting was more opportunity for oral participation. For both groups, the small instructional groups in the pullout setting did not lead to a reduction in the amount of time spent in management and workbook activities. For remedial reading students, pullout did allow a greater proportion of time to be devoted to reading, discussion, and oral participation.

Students' Reading Experiences and Achievement

Results

Simple correlations. Correlations between achievement and total time devoted to reading instruction (across the two settings) were computed, with and without a control for pretest performance. All correlations were found to be non-significant.

Simple correlations were computed between achievement and representative measures of curriculum and methods (as defined in Figure 2): phonics, comprehension, oral drill and workbook, each summed across the two reading settings. Comprehension activities correlated modestly but significantly with Stanford reading comprehension (r = .23, p < .05); it also predicted contextual decoding on the Decoding Skills Test (r = .29, p < .01). Phonics correlated significantly with Stanford reading comprehension (r = .19, p < .05) and negatively with performance on the Decoding

Skills Test ($r = -.31$, $p < .01$). Analysis of graphic display of phonics data and decoding scores indicated that students with the lowest decoding scores were spending a relatively large amount of time in phonics activities. Oral drill and workbook did not correlate significantly with achievement. None of these curriculum and method variables correlated significantly with the Stanford language measure.

School Effects on Posttest Achievement. The effect of school on posttest achievement was tested using a MANOVA where reading comprehension scores from student files (pretest scores) served as a covariate and the Stanford comprehenion, Stanford language, and Decoding Skills Test contextual decoding score were the dependent measures. Schools varied significantly in posttest achievement (Pillais' test, multivariate F (15, 210) = 5.08, $p < .001$; Hotelling's test, multivariate F (15, 200) = 1.60, $p < .001$). Univariate tests indicated schools differed significantly on the Stanford comprehension measure at posttest, when pretest was covaried, F (5,70) = 14.83, $p < .001$, and on the Stanford language measure, F (5, 70) = 7.94, $p < .001$. They did not differ significantly in decoding when the effect of pretest performance was covaried. Average achievement test scores for each school are reported in Table 6.

Insert Table 6 about here

Regression Analyses. Three regression equations were computed to determine whether performance on the three posttests could be predicted from measures of students' reading experiences and pretest performance. To facilitate comparisons with previous research (Haynes & Jenkins, 1986; Leinhardt et al, 1981), the measures of reading experience were silent reading (of text and words), oral reading (of text and words) and indirect reading. Correlations among these measures and the posttests are summarized in Table 7.

Insert Table 7 about here

For the equations written to predict performance on the Stanford reading comprehension and language measures, the squared multiple correlation did not differ significantly from zero, although pretest score was significantly correlated with the comprehension measure. However, the third regression equation did predict significantly performance on the Decoding Skills Test, multiple $r2 = .30$, $F\ (4, 60) = 6.42$, $p < .001$. As noted in Table 8, pretest score and oral reading yielded significant t values for their respective regression coefficients.

Insert Table 8 about here

Because of evidence of school differences in achievement, the

regression analysis was also run controlling for school effects. That is, for each set of predictors and criterion, the correlation matrix was computed based on scores pooled within schools. These matrices of partial correlations served as the basis for a second series of regression analyses. The findings of the second set of equations did not differ fundamentally from those of the the first set, so, in the interest of economy, these results are not reported.

Discussion

Correlational evidence suggests that simply increasing the amount of time allocated for formal reading instruction is not related to increases in reading achievement. This may occur because increases in total reading instructional time are often made at the expense of instruction that facilitates reading of content area materials. Also, increased time may be allocated to activities that do not enhance achievement.

Time engaged in certain specific reading activites was related to measures of achievement. Time spent on comprehension activities (which, as Figure 2 notes, included discussion, reading text, and indirect experiences with text) was modestly related to success on measures of decoding of text and comprehension. Time spent on phonics activities (defined in Figure 2 as reading words and letters) also correlated with comprehension score. While only correlational evidence, these data suggest that if students had more opportunity for reading and discussion, their achievement

would improve. On the other hand, workbook activities and their oral analog, oral drill, were not related to reading achievement. Again, this correlational evidence suggests that minimizing these activities might increase reading achievement.

A regression equation suggested that score on the Decoding Skills Test had modest predictability, with pretest and time spent oral reading found to be statistically significant predictors. This finding is comparable to results obtained by Haynes and Jenkins (1986). However, both Haynes and Jenkins, and Leinhardt et al. (1981) obtained better predictability because of stronger correlations between pre- and posttest measures. The present study may have been limited by using pretest scores from several tests. (Another bit of evidence to suggest problems with the pretest is the un-evenness of change in different schools from pretest to posttest comprehension measures. In the two rural schools, the Stanford was the pretest, and students were shown to make reasonable gains from pretest to posttest. The Iowa Test of Basic Skills and the California Achievement Test were used in the other schools, where students appeared to decline in performance from pretest to posttest.)

Haynes and Jenkins (1986) and Leinhardt et al. (1981) also obtained stronger correlations between silent reading and posttest achievement than obtained in this study. One possible explanation is a near floor effect for urban students in this study on the Stanford comprehension measure.

School also had a powerful effect on student achievement. In our sample, urban students had generally lower achievement and rural students had generally higher achievement. However, the regression equation that controlled for school effect indicated that school did not alter the predictability of achievement from student reading experiences.

Recommendations for Pullout Programs

In previous research, three recommendations have been made for pullout programs: 1) because of the relationship between time on task and achievement, to maintain an adequate amount of time devoted to reading instruction (Leinhardt et al., 1981); 2) because many students experience a fragmented reading curriculum, to increase congruence in the reading curriculum presented in the classroom and pullout settings (Allington & Johnston, in press); 3) because of apparent similarities of resource and remedial programs, to combine them (Allington & McGill-Franzen, in press-b; Jenkins et al., 1988).

Finding from the present study speak to these recommendations. The non-significant relationship obtained between time allocated to reading instruction and reading achievement suggests that to increase achievement, it is not sufficient to increase time allocated for formal reading instruction. In their general emphasis on phonics and comprehension activities, pullout programs are modestly coordinated with classroom reading instruction and especially well coordinated for resource room students. However,

greater congruence, and more specific data about congruence can be sought. There appears to be sufficient similarity in pullout programs to justify experimental attempts to combine resource and remedial programs. Combining programs might enhance congruence, by reducing the number of pullout programs associated with any given classroom program and making it simpler for teachers to do collaborative planning.

We concur with Allington and McGill-Franzen (in press-b) that the focus of attention should the quality of instruction provided in pullout programs. The vast majority of lessons we observed were carefully planned and had positive aspects that were not revealed by the coding system, such as activities that encouraged students to read at home, cooperative learning, and peer tutoring. Yet the expense of these programs can only be justified if they provide students with experiences they do not have in the classroom.

This study, and Haynes and Jenkins (1986) found students to be spending comparable time in management, waiting, or off-task. Leinhardt et al. (1981) suggested improving instruction by minimizing time spent on these less productive activities. While we do not disagree, we suspect that beyond a certain level, little can be done to reduce time spent on management, waiting, and off-task behavior.

In this study, students spent less of their pullout instructional time on direct reading activities than did Haynes &

Jenkins'(1986) students, and more time on indirect reading activities. For schools like the ones used in this study, reading programs might be improved by reducing the time allocated to indirect reading activities, especially workbook and oral drill activities, and increasing the time allocated for reading and discussion.

Finally, we note that the tremendous variability of resource and remedial programs limits the researcher's ability to generalize. In such a situation, it is difficult to assess the impact of these programs on student achievement.

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Table 1

Breakdown of Subjects by School and Program

School	Rural1	Rural2	Suburb1	Suburb2	Urban1	Urban2	Total
Grade 2							22
Resource	0	0	0	2	3	3	8
Remedial	6	0	4	0	2	2	15
Grade 3							20
Resource	0	2	2	2	1	1	8
Remedial	3	3	3	0	3	0	12
Grade 4							20
Resource	1	1	3	3	0	1	9
Remedial	3	3	2	0	2	1	11
Grade 5							16
Resource	0	0	3	2	1	1	7
Remedial	4	1	2	0	1	1	9
School Total	17	10	19	9	13	10	78
Total Resource	1	3	8	9	5	6	32
Total Remedial	16	7	11	0	8	4	46

Table 2

Reading Experiences of Students in Different Grades

Grade	2		3		4		5	
Activity								
Off-Task	6.8	(4.2)	6.8	(3.6)	5.1	(4.2)	4.5	(4.4)
Direct Reading	36.8	(14.8)	33.2	(9.7)	32.8	(9.1)	31.7	(9.2)
Indirect Reading	32.2	(9.7)	33.2	(7.9)	36.9	(8.9)	38.1	(8.3)
Academic Other	2.6	(2.5)	1.3	(2.1)	1.4	(3.8)	1.2	(1.1)
Management	10.5	(4.6)	11.1	(2.9)	10.4	(3.2)	11.7	(3.8)
Waiting	6.7	(2.9)	7.1	(2.9)	8.8	(3.2)	8.3	(4.6)
Out-of-Room	3.6	(4.4)	6.1	(6.9)	5.4	(7.6)	2.4	(3.6)
Phonics	13.6	(9.8)	5.9	(4.8)	7.8	(4.4)	9.1	(8.5)
Comprehension	38.1	(18.6)	37.2	(12.8)	34.4	(7.4)	35.8	(15.8)

Note: All numbers are percentages. Numbers in parentheses are standard deviations.

Table 3

Effect of School on Students' Reading Experiences

	Rural1	Rural2	Suburb1	Suburb2	Urban1	Urban2
Reading Instruction	75.3	63.1	61.1	31.7	88.1	62.3
	(10.3)	(12.8)	(9.7)	(9.0)	(16.8)	(14.3)
Direct Text	16.0	10.2	13.7	4.5	30.5	13.7
	(4.0)	(3.4)	(7.0)	(2.5)	(9.4)	(6.9)
Phonics	9.8	3.9	5.6	2.0	10.5	1.9
	(5.5)	(3.0)	(3.8)	(1.4)	(6.0)	(2.3)
Discussion	4.5	11.4	4.0	6.7	4.3	6.7
	(3.1)	(4.9)	(2.5)	(5.3)	(2.4)	(3.3)
Oral practice	4.2	5.1	6.4	4.2	5.0	4.7
	(2.2)	(1.6)	(4.4)	(4.1)	(1.9)	(4.7)
Workbook	14.1	7.8	7.2	4.2	15.9	6.0
	(6.4)	(2.9)	(3.9)	(4.1)	(6.6)	(2.3)

Note: Numbers reported are minutes. Numbers in parentheses are standard deviations.

Table 4

Percentage of Students' Time spent on Basic SOBR Activities in different Settings

	Remedial Students			Resource Students	
Activity	Class	Pullout	Pullin	Class	Pullout
Off-task	7.4	4.4	4.3	5.9	3.7
	(4.6)	(5.5)	(1.7)	(5.4)	(3.4)
Direct Reading	32.7	42.1	23.9	34.2	31.7
	(11.4)	(13.4)	(8.1)	(15.3)	(11.8)
Indirect Reading	33.5	30.8	39.8	37.2	37.8
	(7.9)	(9.7)	(5.3)	(14.4)	(9.8)
Academic other	2.1	0.7	1.9	1.2	2.6
	(3.2)	(2.5)	(1.4)	(2.3)	(4.1)
Management	9.7	11.5	17.9	9.5	11.7
	(4.3)	(5.6)	(3.8)	(4.8)	(4.8)
Waiting	8.6	6.5	9.5	5.2	7.4
	(5.5)	(4.5)	(2.9)	(3.0)	(4.8)
Out of room	4.9	3.7	2.6	6.5	3.2
	(8.9)	(4.8)	(3.8)	(12.1)	(4.4)
Uncertain	1.9	1.5	1.8	1.8	2.4
	(1.8)	(2.1)	(1.4)	(1.5)	(4.8)

Note: Numbers in parentheses are standard deviations.

Table 5

Percentage of Students' Time spent on Curriculum and Methods Activities in different Settings

Activity	Remedial Students			Resource Students	
	Class	Pullout	Pull-in	Class	Pullout
Phonics	7.1	13.7	4.5	7.6	10.6
	(6.5)	(11.9)	(3.2)	(8.6)	(8.5)
Comprehension	35.2	33.6	34.5	38.0	33.6
	(11.1)	(15.5)	(5.8)	(15.3)	(15.1)
Direct Text	23.3	25.8	17.0	23.7	19.3
	(9.6)	(12.0)	(1.9)	(13.3)	(9.3)
Indirect Text	1.5	1.8	2.2	2.3	3.1
	(2.0)	(3.4)	(0.0)	(3.5)	(4.1)
Workbook	13.3	17.9	13.0	15.0	11.1
	(8.7)	(9.8)	(2.8)	(9.2)	(6.7)
Oral Drill	8.0	4.1	9.2	7.6	11.9
	(4.1)	(4.2)	(4.1)	(5.8)	(11.7)
Discussion	10.2	6.0	15.3	11.5	11.2
	(7.9)	(7.5)	(3.3)	(14.8)	(9.4)
Oral Participation	7.3	15.3	11.4	7.3	18.2
	(5.2)	(10.8)	(2.9)	(5.4)	(9.7)
Active Participation	48.7	64.9	39.1	53.9	54.6
	(15.1)	(11.1)	(6.0)	(17.2)	(12.3)

Note: Numbers in parentheses are standard deviations.

Table 6

Average Achievement Test Scores by School

	Rural-1	Rural-2	Suburb-1	Suburb-2	Urban-1	Urban-2
Pretest						
Comprehension	30.8*	26 3*	42.5**	31.6***	22.5***	20.8***
Stanford						
Comprehension	45.4	36.0	14.0	15.8	8.9	9.2
Stanford						
Language	48.9	57.5	39.2	50.1	23.0	15.7
Decoding						
Skills Test	3.4	4.0	3.7	3.7	2.9	2.9

Note: All scores are percentile ranks, except for Decoding scores, which are grade equivalent scores. The language score is the average of vocabulary and listening comprehension scores from the Stanford Achievement Test.

*Stanford Achievement Test

**Iowa Test of Basic Skills

***California Achievement Test

Table 7

Correlations Among Variables in Regression Analyses

	Pretest	Silent	Oral	Indirect	Comp.	Language
Pretest						
Silent Reading	.00					
Oral Reading	-.11	.28*				
Indirect	-.10	.52***	.16			
Stanford Comp.	.24*	.02	.06	.09		
Stanford Lang.	.11	-.17	-.27*	-.15	.37***	
Decoding Skills	.38***	-.15	-.39***	.02	.17	.20*

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 8

Results of Multiple Regression

Explaining Decoding Score	Raw Regression Coefficient	Estimated Standard Error	t
Pretest	.260	.078	3.34 ***
Silent Reading	-.003	.003	-1.25
Oral Reading	-.023	.008	-2.96 **
Indirect Reading	.006	.004	1.51

** $p < .01$; *** $p < .001$

Figure 1

Student Codes from Modified SOBR Coding System

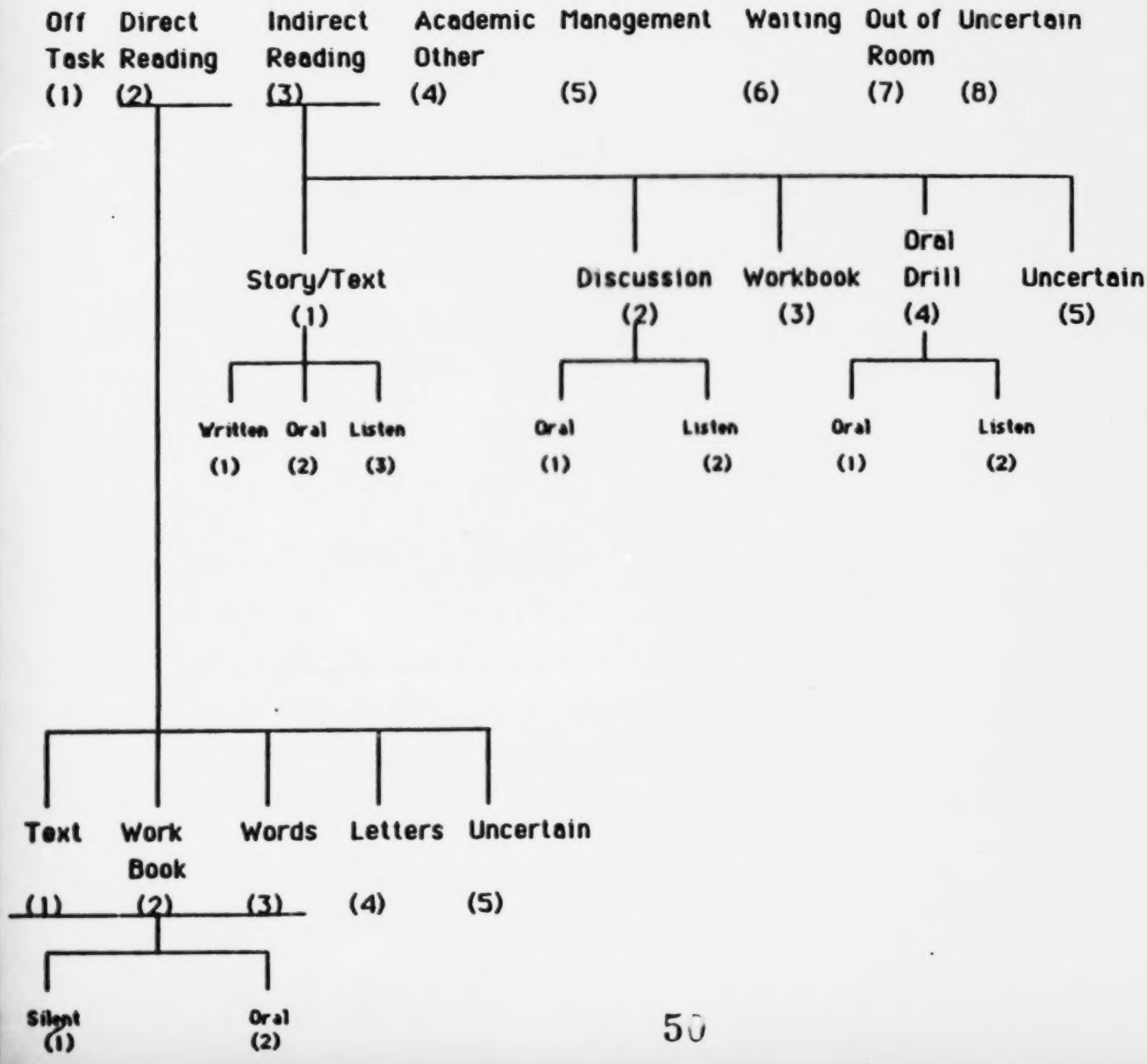
Off Task (1)
Direct Reading (2)
Indirect Reading (3)
Academic Other (4)
Management (5)
Waiting (6)
Out of Room (7)
Uncertain (8)
Story/Text (1)
Discussion (2)
Workbook (3)
Oral Drill (4)
Uncertain (5)
Written (1)
Oral (2)
Listen (3)
Oral (1)
Listen (2)
Oral (1)
Listen (2)
Text (1)
Work Book (2)
Words (3)
Letters (4)
Uncertain (5)
Silent (1)
Oral (2)

Figure 2

Definitions of Curriculum and Method Variables

Curriculum Variables

phonics = read letters; + read words silently + aloud

comprehension = read text silently + aloud; +
listen + speak in discussion; +
listen to, tell, + write stories/text

basic skills = read letters; + read words silently + aloud;
listen to + speak in oral drill

Method Variables

direct text = read text silently + aloud

indirect text = listen to, tell, + write stories/text

oral drill = listen to + speak in oral drill

discussion = listen to + speak in discussion

oral participation = read words aloud + read text aloud +
tell stories/text + speak in discussion +
speak in oral drill

active participation = read letters; + read words silently + aloud;
read text silently + aloud;
+ read workbook; + workbook; +
tell + write stories/text; +
speak in oral drill; + speak in discussion

Other

oral reading = read letters + read words aloud +
read text aloud

silent reading = read words silently + read text silently

Figure 3

Reading Instruction Time in Six Schools for Resource and Remedial Students

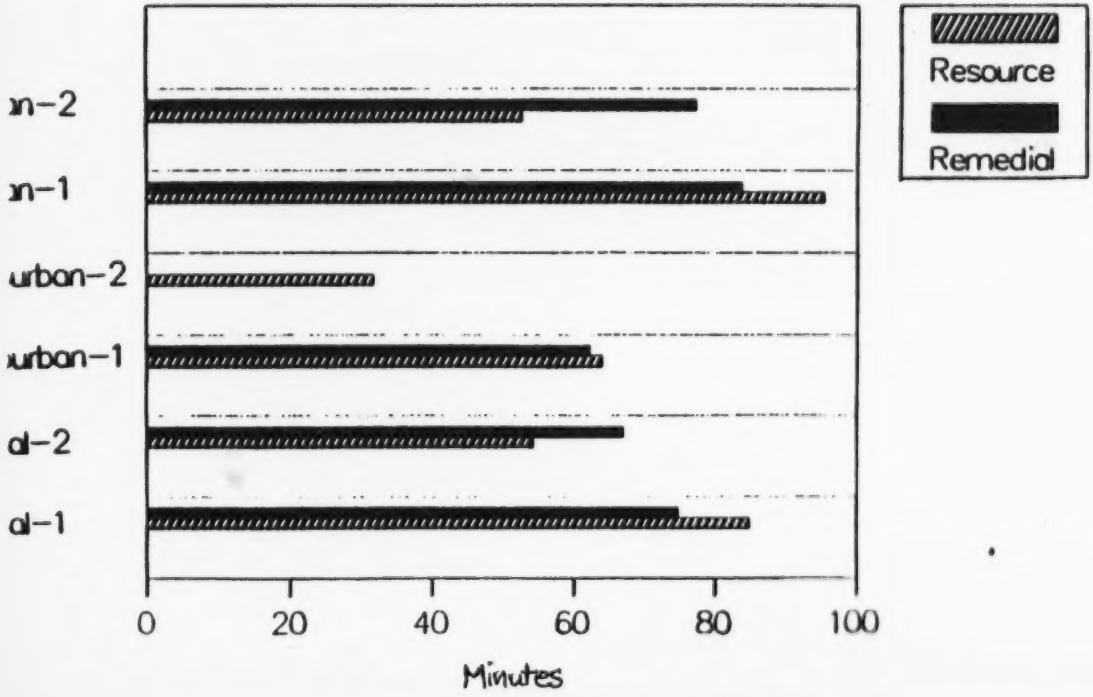
Resource
Remedial
0
20
40
60
80
100
Minutes

Figure 4

Resource and Remedial Students' Experiences Reading Text in Six Schools

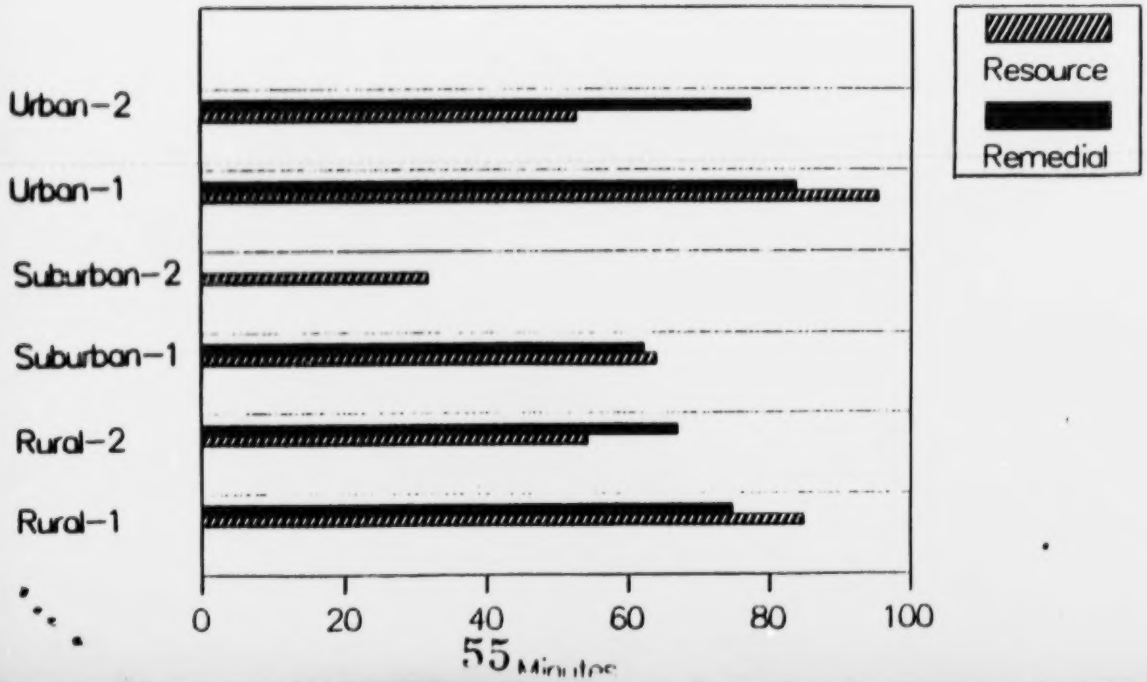

Figure 5

Resource and Remedial Students' Experiences with Basic Skills Activities in Six Schools